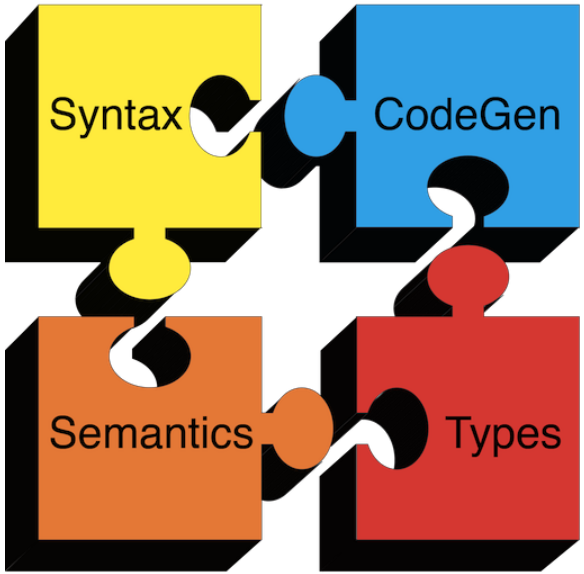
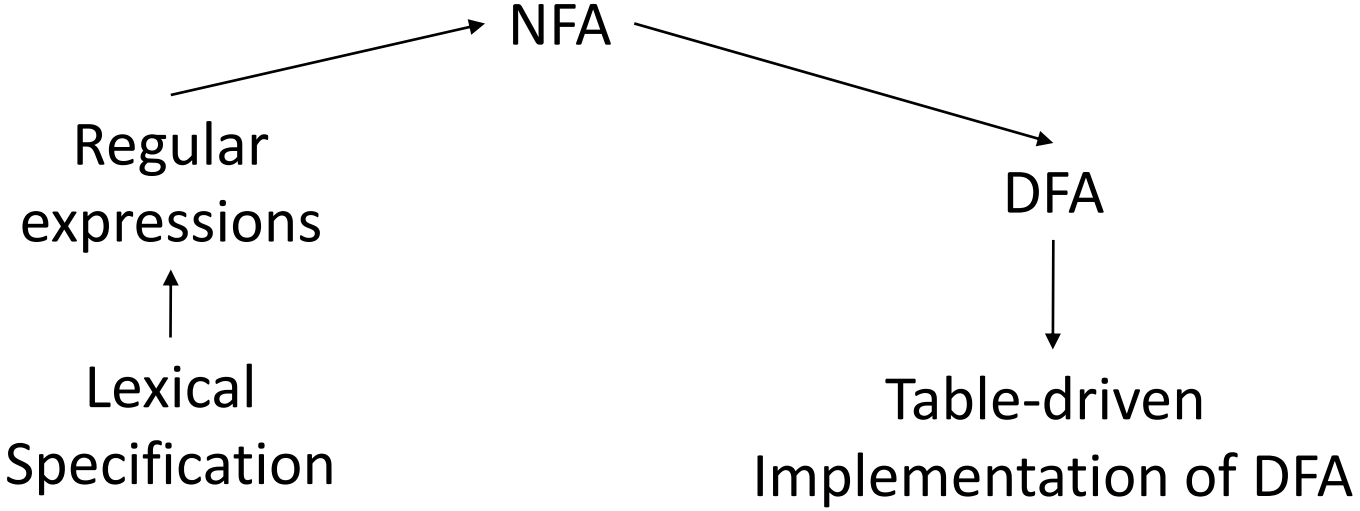



# Compilers

## Implementing Finite Automata

Alex Aiken

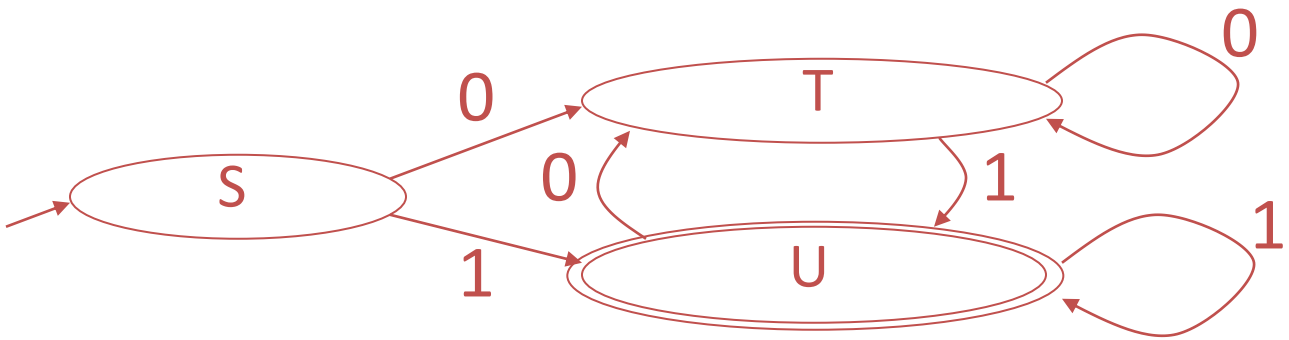
# Implementing FA



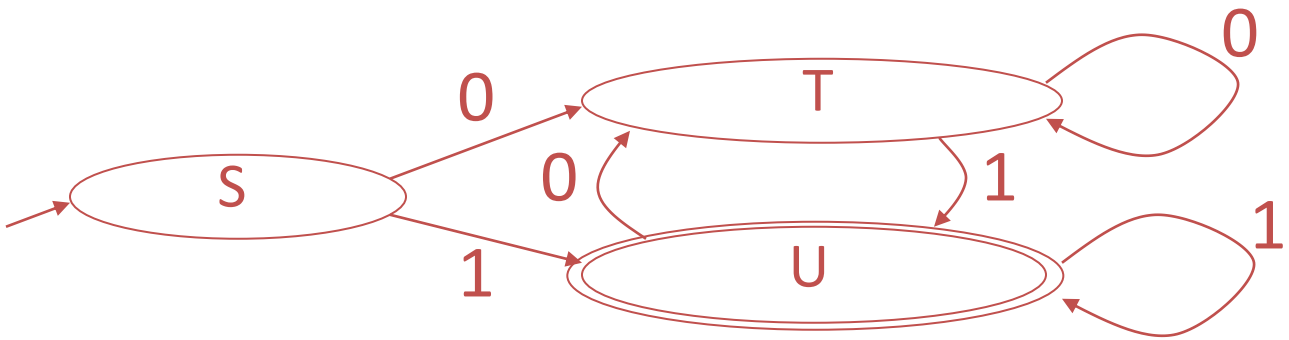
# Implementing FA

- A DFA can be implemented by a 2D table T
  - One dimension is states
  - Other dimension is input symbol
  - For every transition $S_i \rightarrow^a S_k$ define T[i,a] = k

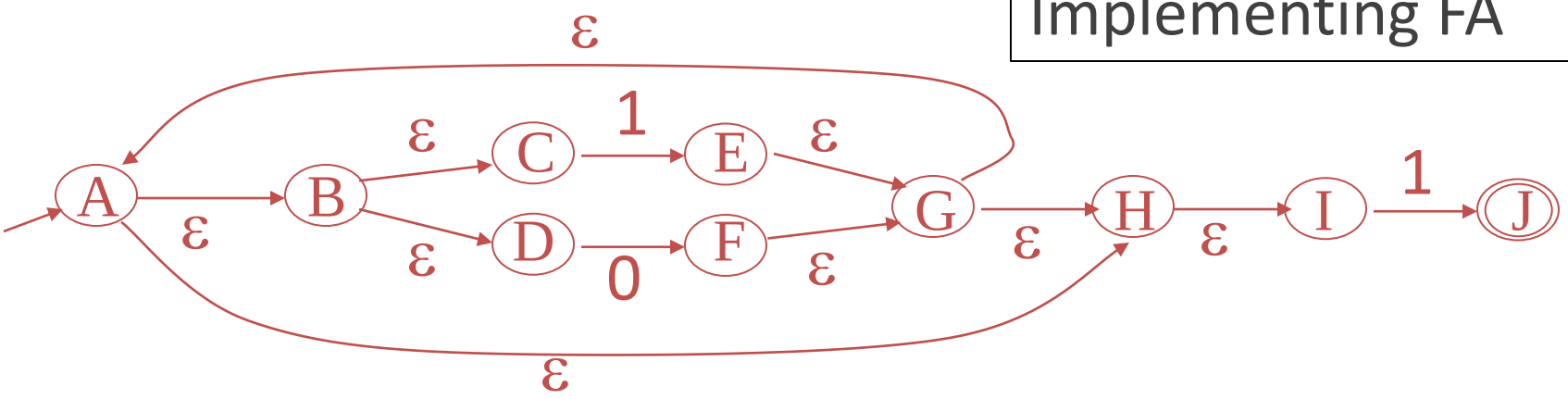
# Implementing FA



# Implementing FA



# Implementing FA



# Implementing FA

- NFA -> DFA conversion is key

- Tools trade between speed and space